

ODONATES OF THE KUTTANAD WETLAND ECOSYSTEM

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Kuttanad is primarily a deltaic formation of five-river systems, namely, Meenachil, Pamba, Manimala, Muvattupuzha and Achencovil, located in fertile low-lying areas of around Vembanad Lake (Shari & Chitra, 2005). It spreads over Alappuzha, Kottayam and Pathanamthitta districts of Kerala, South West India and forms an integral part of the Vembanad-Kol Ramsar site. This region lies between 9° 17' to 9° 40' N latitude and 76° 19' to 76° 33' E longitude and separated from the Arabian Sea by a narrow strip of land. . Major part of this region lies 0.6 to 2.2 m below mean sea level, hence water logged almost throughout the year. Major portion of the Vembanad estuary is situated in Kuttanad wetland, which is the biggest estuary in the Southwest coast of India. It experiencing warm climate with fairly uniform temperature throughout the year ranging from 21°C to 36°C. Humidity in general is very high all throughout the year (Shari & Chitra, 2005). The average annual rainfall received is around 3000mm (Shari & Chitra, 2005) of which about 83% is received during South West monsoon months.

Most of the species were identified by visual encounter methods. Species were identified with the help of standard references and field guides such as Farser (1933,1934,1936), Emiliyamma *et al.* (2005), Subramanian (2005), Mitra (2006). Species, which could not be identified were photographed with digital cameras and identified later with the help of experts. In rare cases a few species, which could not identified by photos were collected for detailed examination. Classification follows Prasad and Varshney (1995).

Total 45 species of damselflies and dragonflies belonging to 35 genera and seven families viz, Coenagrionidae, Platycnemididae, Lestidae, Calopterygidae, Chlorocyphidae, Gomphidae, Aeshnidae, Libellulidae were identified from the Kuttanad wetlands (Table.1). These make 32.84% of the odonates documented from Kerala state (Emiliyamma *et al.* 2005). Of these 57.78% belongs to Libellulidae family; where as families Lestidae, Chlorocyphidae and Gomphidae showed lowest number of species in

the area and represented by one species each. Most common species of odonates found in this wetland are *Rhyothemis variegata* and *Brachithemis contaminata*. These species are very commonly found in almost all paddy fields and other possible habitats. *Gynacantha bayadera*, is a new species to Kerala. It is not included in the checklist provided in the book by Emiliyamma *et al.* (2005). Damselfly species *Archibasis oscillans* has been recorded from Kuttanad; this is second site for this species from Kerala. So far *Archibasis oscillans* are recorded only from Thammaracherry ghat area of Kozhikkod district. *Agriocnemis keralensis* is an endemic species to Kerala. Thought to be point endemic to its type locality Karamana. Recently it has been discovered from Kidangoor, Kottayam district by Emiliyamma (2005), but this species is one of the common damselfly species of Kuttanad. Forest loving species like *Vestalis gracilis* and *Vestalis apicalis* also fairly well distributed in the area. Migratory species like *Pantala flavescens* could be seen in thousands in the paddy fields of Kuttanad, immediately after monsoon.

Landscape alteration, unsustainable developmental activities and high level of pesticide and fertilizer use are increasing here in an alarming rate, which are harmfully affecting the odonates especially the in the larval stages. Long-term intensive investigations are needed for getting a comprehensive documentation of the dragonfly fauna of Kuttanad wetlands.

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Table 1. Checklist of the damselflies and dragonflies recorded from the Kuttanad wetlands

Order: Odonata

Suborder: Zygoptera

Family: Coenagrionoidae

1. *Ceriagrion cerinorubellum* (Brauer, 1865)
2. *Ceriagrion coromandelianum* (Fabricius, 1798)
3. *Pseudagrion microcephalum* (Rambur, 1845)
4. *Archibasis oscillans* (Selys, 1877)
5. *Ischnura aurora* (Brauer, 1865)
6. *Ischnura senegalensis* (Rambur, 1842)
7. *Agriocnemis pygmaea* (Rambur, 1842)
8. *Agriocnemis keralensis* Peters, 1981
9. *Mortonagrion varralli* Fraser, 1920

Family: Platynemididae

10. *Copera marginipes* (Rambur, 1842)
11. *Copera vittata* Laidlaw, 1917

Family: Lestidae

12. *Lestes praemrosus* Kirby, 1893

Family: Calopterygidae

13. *Vestalis apicalis* Selys, 1873

14. *Vestalis gracilis* (Rambur, 1842)

Family: Chlorocyphidae

15. *Libellago lineata* (Fraser, 1928)

Suborder: Anisoptera

Family: Gomphidae

16. *Ictinogomphus rapax* (Rambur, 1842)

Family: Aeshnidae

17. *Anax guttatus* (Burmeister, 1839)

18. *Gynacantha dravida* Liefftnick, 1960

19. *Gynacantha bayadera* Selys, 1831

Family: Libellulidae

20. *Acisoma panorpoides* Rambur, 1842

21. *Aethriamanta brevipennis* (Rambur, 1842)

22. *Brachydiplax sobrina* (Rambur, 1842)

23. *Brachythemis contaminata* (Fabricius, 1793)

24. *Bradinopyga geminata* (Rambur, 1842)

25. *Crocothemis servilia* (Drury, 1770)

26. *Diplacodes nebulosa* (Fabricius, 1793)

27. *Diplacodes trivialis* (Rambur, 1842)

28. *Hydrobasileus croceus* (Brauer, 1867)

29. *Lathrecista asiatica* (Fabricius, 1798)

30. *Neurothemis fulvia* (Drury, 1773)

31. *Neurothermis tullia* (Drury, 1773)

32. *Neurothemis intermedia* (Ris, 1919)

33. *Orthetrum chrysis* (Selys, 1892)

34. *Orthetrum sabina* (Drury, 1770)

35. *Pantala flaescens* (Fabricius, 1798)

36. *Potamarcha congener* (Rambur, 1842)

37. *Rhodothemis rufa* (Rambur, 1842)
38. *Rhyothemis variegatae* Linnaeus, 1763
39. *Tetrathemis platyptera* Selys, 1878
40. *Tholymis tillarga* (Fabricius, 1798)
41. *Tramea limbata* (Rambur, 1842)
42. *Trithemis aurora* (Burmeister, 1839)
43. *Trithemis pallidinervis* Selys, 1889
44. *Urothemis signata* (Rambur, 1842)
45. *Zyxomma petiolatum* (Rambur, 1842)

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